PROGRESS REPORT

R 28 (rev. 11/53)

ORGANIC CHEMICALS DIVISION
St. Louis Research Department

Job No. 117-2616
Report No. 31

Reported By:
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Date: July 30, 1954

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At St. Louis	At St. Louis	At WGK Plant	
		25-29-	35- E.E. Cowell
1 Library	13 R.O. Nellums	30 Development	36- H.I. Armstrong
1a Library	14 O.J. Weinkauff		37- R.E. Hatton
2 D.M. Campbell	15 J.R. Wilson	At J.F.Q. Plant	38- G.R. Buchanan (2)
3 H.W. Faust	16 F.B. Zienty		39- J.F. White-Everett
4 L.L. Fellinger	17 O. DeGarmo	31-	40- W.R. James-Everett
5 H.R. Gamrath	18 J F Q Development		41- H.W. Mohrman-Spfld.
6 R.M.Hitchens	19 J.R. Durland	At Nitro	42- [illegible] 246 401.1
7 C.A. Hochwalt	20 H. M. Morris	32-W.P. Metzner	43- [illegible] SERVICES
8 R.E. Howard	21 J. H. Lum		44-
9 D. S. Weddell	22 P.G. Marsh	At Dayton	45- [illegible]
10 R.H. Munch	23 J. L. Hammer	33 L. Lederman	46- [illegible]
11 F.M. Murdock	24 B.E. Thomas	34 N.N.T. Samaras	47- [illegible] AFTER 6 MONTHS
12 H.K. Nason			48- [illegible]
			49- [illegible]

Title:

APPLICATION WORK ON PRESENT PLASTICIZERS

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Problem:

A continuation of the investigation of secondary plasticizers

A. ~~Arochlor~~ 1242, 1248 and 1254.
B. Chlorafin 40, 42 and 40V.

Summary:

A. Preliminary evaluation tests on the three Arochlors indicate that their advantage lies in rapid fusion characteristics and good heat stability.

B. All three Chlorafins were incompatible due to normal exudation until mixed 1:2 with DOP. Even when mixed 1:2 with DOP, they were incompatible in the loop test.

DETAILS

A. Arochlors 1242, 1248 and 1254, biphenyls chlorinated 42, 48 and 54%, suffer from heavy fuming and high volatility. They have low kerosene extraction and exude slightly when mixed 1:1 and 1:2 with DOP in the loop tests.

B. Chlorafin 40, 42 and 40V, parrafins chlorinated 40, 42 and 40%, formed light-colored films with good flexibility and low volatility but are moderately incompatible in the loop test even when mixed 1:2 with DOP.

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TABLE III

	Fusion Characteristics	Loop Compatibility Tests
Arochlor 1242, 40%	rapid - 2 min.	no exudation
50 PHR	" " "	" "
1:1 DOP	" " "	Mod. exudation
1:2 DOP	" " "	Sl. exudation
Arochlor 1248, 40%	moderate - 2-5 min.	no exudation
50 PHR	" " "	" "
1:1 DOP	" " "	sl. exudation
1:2 DOP	" " "	very sl. exudation
Arochlor 1254, 40%	slow - 5-7 min.	no exudation
50 PHR	" " "	" "
1:1 DOP	" " "	very sl. exudation
1:2 DOP	" " "	very sl. exudation
Chlorafin 40, 40%	slow - 5 min.	incompatible per se
50 PHR	" 6 "	
1:1 DOP	moderate - 3 min.	heavy exudation
1:2 DOP	rapid - 2 min.	moderate exudation
Chlorafin 42, 40%	slow - 5 min.	incompatible per se
50 PHR	" - 7 min.	" " "
1:1 DOP	moderate - 3 min.	heavy exudation
1:2 DOP	rapid - 2 min.	moderate exudation
Chlorafin 40V, 40%	slow - 6 min.	incompatible per se
50 PHR	" - 8 min.	" " "
1:1 DOP	moderate - 4 min.	heavy exudation
1:2 DOP	" - 3 min.	moderate exudation

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Aug 2, 1954

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